Check List the journal of biodiversity data

NOTES ON GEOGRAPHIC DISTRIBUTION

Check List 11(3): 1648, April 2015 doi: http://dx.doi.org/10.15560/11.3.1648
ISSN 1809-127X © 2015 Check List and Authors

# Upper altitudinal and southern geographic range extensions for *Cruziohyla craspedopus* (Anura: Hylidae) (Funkhouser, 1957) in Ecuador

**Darwin Núñez**[1], **Trotsky Riera-Vite**[2], **Flavio Orellana**[2] and **Jorge Brito**[3*]

1 Serpentario Panki. Zamora, Ecuador
2 Naturaleza y Cultura Internacional. Amazonas y Pio Jaramillo. Casilla: 11-01-332. Zamora, Ecuador
3 Museo Ecuatoriano de Ciencias Naturales del Instituto Nacional de Biodiversidad. Calle Rumipamba 341 y Av. de los Shyris. Casilla: 17-07-8976. Quito, Ecuador
* Corresponding author. E-mail: jorgeyakuma@yahoo.es

**Abstract:** We report the southernmost record of *Cruziohyla craspedopus* in Ecuador. An adult female was collected in the province of Zamora Chinchipe in southern Ecuador in the Cordillera del Condor. This record increases the previously reported altitudinal range for the species by 468 m and extends the distribution by 105 km to the south.

**Key words:** Cordillera del Cóndor, *Cruziohyla craspedopus*, Zamora Chinchipe

Tree frogs of the genus *Cruziohyla* are represented by two species according to Faivovich et al. (2005): *C. calcarifer* (Boulenger 1902) and *C. craspedopus* (Funkhouser 1957). *Cruziohyla craspedopus* occurs in the lowlands of Colombia, Ecuador, Peru and Brazil (Hoogmoed and Cadle 1991; Lima et al. 2003; Frost 2015; Meneghelli et al. 2011; Rodrígues et al. 2011; Read and Ron 2011) at elevations ranging from 50 to 600 m (Angulo et al. 2004). In Ecuador the species is found in the northern and southern Amazonian region within the provinces of Sucumbios, Pastaza and Morona Santiago (Funkhouser 1957; Hoogmoed and Cadle 1991; Read and Ron 2011). The frog inhabits tall trees in primary and secondary forests and descends to low branches in order to reproduce (Meneghelli et al. 2011).

We captured one individual of *C. craspedopus* (Figure 1) in the forest surrounding the Kusunts Shuar Center, Zurmi parish, Nangaritza region in the province of Zamora Chinchipe, southeastern Ecuador (04°18′9″ S, 078°38′21.12″ W, 1068 m) near the sandstone plateau of the Cordillera del Condor, which is less than 250 m from the Peruvian border (Figure 2). The biogeographical type belongs to the Oriental Subtropics (Albuja et al. 2012). The ecosystem corresponds to the Evergreen Forest Foothill over the limestone outgrowth of the Amazonian cordilleras (Neill and Guevara 2013). The multistoried forest has a 30 m high canopy, and epiphytes are abundant. The terrain is hilly. Timber species of commercial value have been selectively cut from the forest. The landscape is a mosaic of forest remnants, cultivated areas with naranjilla (*Solanum quitoense* Lam.), and disturbed areas (pastures and cultivated naranjilla) with more than 15 years of natural regeneration forming an array of successional stages.

The specimen of *C. craspedopus* was captured on 11 November 2013 during the day (14:00 h) on a tree (*Inga* cf. *extranodis*) branch approximately 1.3 m above the forest floor. The specimen was deposited in the División de Herpetología, Museo Ecuatoriano de Ciencias Naturales (DHMECN 11296). The nearest body of standing crystalline water was over 300 meters to the northeast of the collection site; however, small puddles (1 m in diameter) of stagnant water were on the forest floor. The specimen was an adult female whose coloration is similar to that described by Rodríguez and Duellman (1994) for breeding females. The main body measurements in millimeters are (DHMECN 11296): snout-vent length 82.22; head length 31.32; head width 31.14; tibia length 44.45; foot length 32.89; tympanum diameter 4.39, hand length 24.08.

This record of *C. craspedopus* along the southeastern slope of Ecuador (Figure 2) expands the upper altitudinal range from 600 m (Angulo et al. 2004) to 1,068 m above sea level (Eastern Subtropical Forest). Moreover, it extends the geographical range of the species in Ecuador by approximately 105 km south and is now the southernmost record for Ecuador. Our record extends the spatial distribution of the species in approximately

**Figure 1.** Adult female of *Cruziohyla craspedopus* DHMECN 11296, Snout-vent length 83.22 mm. Photo by: T. Riera-Vite.

25,000 km². Previously, Santiago in Morona Santiago province was the southern edge of this species' range in Ecuador (Hoogmoed and Cadle 1991).

Much remains to be known about the amphibians and reptiles in the Cordillera del Condor in Ecuador. Although in recent years there have been biological expeditions to several areas of the Cordillera (Almendáriz et al. 2014), it is necessary to add institutional efforts in order to document the high diversity of one of Ecuador's most enigmatic corners. In the Cordillera del Condor, the pressure of agricultural expansion for growing naranjilla plants (*Solanum quitoense* Lam.), combined with selective logging and mining, threatens one of the regions of Ecuador with the highest levels of endemism. Threats to habitat focus mainly on coastal areas, where farmers find suitable land for their crops.

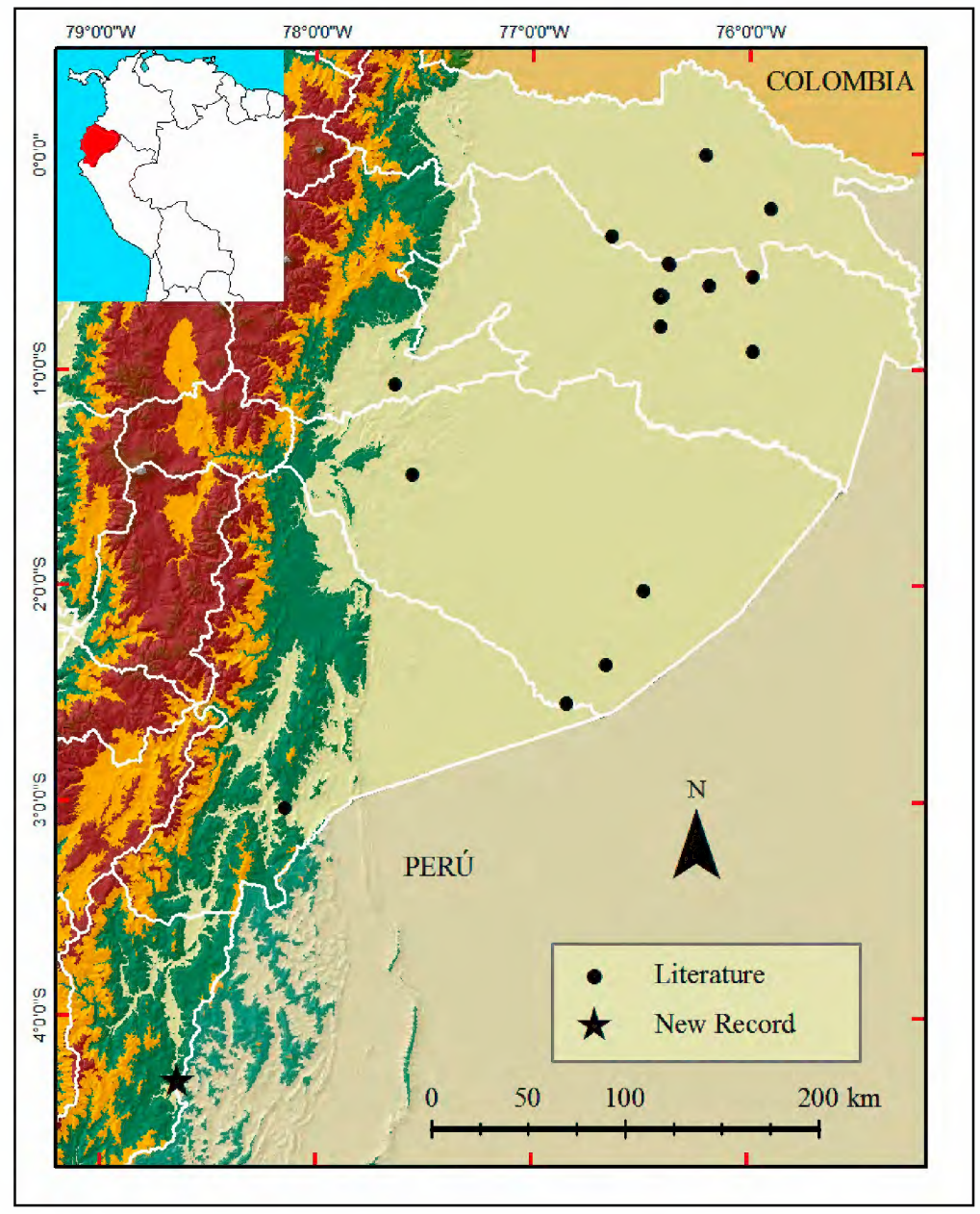


**Figure 2.** Distribution of *Cruziohyla craspedopus* in Ecuador.

## ACKNOWLEDGEMENTS

Special thanks to Carlos Rosales of Naturaleza y Cultura Internacional for his help in identifying plant species in the field and for reviewing the final manuscript. Rodrigo Lingnau, William R. Teska and three anonymous reviewers provided insightful comments on the manuscript. Also to Segundo Velez, one of the first mestizos to reach Alto Nangaritza, for

his advice and concern for preserving the species that surround it.

## LITERATURE CITED


Albuja, L., A. Almendáriz, R. Barriga, F. Cáceres, L. Montalvo and J. Roman. 2012. Fauna de vertebrados del Ecuador. Escuela Politécnica Nacional. Editorial Arial 12, Quito.

Almendáriz, A., J.E. Simmons., J. Brito, and J. Vaca-Guerrero. 2014. Overview of the herpetofauna of the unexplored Cordillera del Cóndor of Ecuador. Amphibian & Reptile Conservation 8(1): 45–64. http://amphibian-reptile-conservation.org/pdfs/Volume/Vol_8_no_1/ARC_8_1_[Special_Section]_45-64_e82_low_res.pdf

Angulo, A., L.A. Coloma, S. Ron, M.S. Hoogmoed, F. Castro, Villegas Rueda, D. Cisneros-Heredia, and J. Icochea. 2004. *Cruziohyla craspedopus*; in: IUCN 2014. IUCN Red List of threatened species. Version 2014.3. Accessed at http://www.iucnredlist.org, 8 April 2015.

Faivovich, F., C.F.B. Haddad, P.C.A. Garcia, D.R. Frost, J.A. Campbell and W. C. Wheeler. 2005. Systematic review of the frog family Hylidae, with Special reference to Hylinae: phylogenetic analysis and taxonomic review. Bulletin of the American Museum of Natural History 294: 1–240. http://hdl.handle.net/2246/462

Frost, D.R. 2015. Amphibian species of the world: an online reference. Version 6.0. New York: American Museum of Natural History. Accessed at http://research.amnh.org/herpetology/amphibia/index.html, 8 April 2015.

Funkhouser, A. 1957. A review of the Neotropical tree-frogs of the genus *Phyllomedusa*. Occasional Papers of the Natural History Museum of Stanford University 5: 1–90.

Hoogmoed, M.S and J.E. Cadle. 1991. Natural history and distribution of *Agalychnis craspedopus* (Funkhouser, 1957) (Amphibia: Anura, Hylidae). Zoologischer Mededelinger 65: 129–142. http://www.repository.naturalis.nl/document/149532

Lima, A.P., M.L. Guida and W. Hödl. 2003. *Agalychnis craspedopus*. Herpetological Review 34(4): 379.

Meneghelli, D., M.R. Messias and P.R.M. Sampaio. 2011. Amphibia, Anura, Hylidae, *Cruziohyla craspedopus* (Funkhouser, 1957): distribution extension in southwestern Amazon state of Rondônia, Brazil. Check List 7(6): 811-812. http://www.checklist.org.br/getpdf?NGD018-11

Neill, D and C. Guevara. 2013. Bosque siempreverde piemontano sobre afloramiento de roca caliza de las Cordilleras Amazónicas; pp. 117–120, in: Sistema de Clasificación de los Ecosistemas del Ecuador Continental. Ministerio de Ambiente de Ecuador. Quito.

Read, M. and Ron, S. R. 2011. *Cruziohyla craspedopus*; in: Ron, S.R., J.M Guayasamin, M.H Yánez-Muñoz, A. Merino-Viteri and D.A. Ortiz. AmphibiaWebEcuador. Version 2014.0. Museo de Zoología, Pontificia Universidad Católica del Ecuador. Accessed at http://zoologia.puce.edu.ec/vertebrados/anfibios/FichaEspecie.aspx?Id=1280/, 5 Feb 2015.

Rodrigues, D.J., M.M. Lima and R.A. Kawashita-Ribeiro. 2011. Amphibia, Anura, Hylidae, *Cruziohyla craspedopus* (Funkhouser, 1957): distribution extension, new state record and distribution map in Brazil. Check List 7(2): 149-150. http://www.checklist.org.br/getpdf?NGD063-10

Rodriguez, L.O and W.E. Duellman. 1994. Guide to the frogs of the Iquitos Region, Amazonian Peru. Association for Ecology and Conservation, Amazon Center for Environmental Education and Research and Natural History Museum, The University of Kansas. Lawrence, Kansas 22:1-80.


**Author's contribution statement:** DN, TRV, FO: Collected the field data, collected the specimen, wrote methodology, designed the map and some of the results. JB: drafted the introduction and the results.

**Received:** August 2014
**Accepted:** April 2015
**Editorial responsibility:** Rodrigo Lingnau